

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
18 January 2001 (18.01.2001)

PCT

(10) International Publication Number  
**WO 01/04305 A3**

(51) International Patent Classification<sup>7</sup>: C12N 15/12,  
C07K 14/47, A61K 38/00, G01N 33/68, C12Q 1/68,  
C12N 15/11, C07K 16/18, A01K 67/027

YUE, Henry [US/US]; 826 Lois Avenue, Sunnyvale, CA  
94087 (US).

(21) International Application Number: PCT/US00/18509

(74) Agents: HAMLET-COX, Diana et al.; Incyte Genomics,  
Inc., 3160 Porter Drive, Palo Alto, CA 94304 (US).

(22) International Filing Date: 6 July 2000 (06.07.2000)

(81) Designated States (*national*): AE, AL, AM, AT, AU, AZ,  
BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE,  
ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD,  
MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD,  
SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ,  
VN, YU, ZA, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/142,678 7 July 1999 (07.07.1999) US

(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian  
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European  
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,  
IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG,  
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(63) Related by continuation (CON) or continuation-in-part  
(CIP) to earlier application:  
US 60/142,678 (CIP)  
Filed on 7 July 1999 (07.07.1999)

**Published:**

— with international search report

(71) Applicant (*for all designated States except US*): INCYTE  
GENOMICS, INC. [US/US]; 3160 Porter Drive, Palo  
Alto, CA 94304 (US).

(88) Date of publication of the international search report:  
2 August 2001

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): TANG, Y., Tom  
[CN/US]; 4230 Ranwick Court, San Jose, CA 95118 (US).

*For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*

(54) Title: HUMAN PROTEINS INVOLVED IN DETOXIFICATION

(57) Abstract: The invention provides human detoxification proteins (DETX) and polynucleotides which identify and encode DETX. The invention also provides expression vectors, host cells, antibodies, agonists, and antagonists. The invention also provides methods for diagnosing, treating, or preventing disorders associated with expression of DETX.

WO 01/04305 A3

# INTERNATIONAL SEARCH REPORT

International Application No  
US 00/18509

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 A61K38/00 G01N33/68 C12Q1/68  
C12N15/11 C07K16/18 A01K67/027

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)  
EPO-Internal, WPI Data, PAJ, BIOSIS, STRAND

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MIYAZAKI TAKASHI ET AL: "Molecular cloning of a novel thyroid hormone-responsive gene, ZAKI-4, in human skin fibroblasts." JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 271, no. 24, 1996, pages 14567-14571, XP002152090 ISSN: 0021-9258 the whole document	1,3,6,7, 9-15
A	US 5 874 248 A (CORLEY NEIL C ET AL) 23 February 1999 (1999-02-23) the whole document --- -/--	1-19,22, 25-28

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

7 November 2000

Date of mailing of the international search report

13.02.01

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Oderwald, H

# INTERNATIONAL SEARCH REPORT

Inte. onal Application No  
US 00/18509

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ALBERTS B ET AL: "MOLECULAR BIOLOGY OF THE CELL" MOLECULAR BIOLOGY OF THE CELL,US,BETHESDA, MD, 1994, pages 575-580, XP002152091 ISSN: 1059-1524 cited in the application the whole document	
P,X	ROTHERMEL BEVERLY ET AL: "A protein encoded within the Down syndrome critical region is enriched in striated muscles and inhibits calcineurin signaling." JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 275, no. 12, 24 March 2000 (2000-03-24), pages 8719-8725, XP002152092 ISSN: 0021-9258 the whole document -----	1,3,6,7, 9-15,19, 22,25-28

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 00/18509

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
Although claim 18 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.: 20, 21, 23, 24  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-28 all partially

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: {1-28 all partially}

An isolated polypeptide comprising amino acid sequence SEQ ID NO: 1 (DETX-1), an isolated polynucleotide encoding said polypeptide (SEQ ID NO: 3). A cell, a transgenic organism, an antibody, a pharmaceutical composition, methods for producing a polypeptide, for detecting a target polynucleotide, for treating a disease and for screening compounds.

2. Claims: {1-28 all partially}

same as invention 1 but comprising SEQ ID NO: 2 and 4 (DETX-2).

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 20, 21, 23, 24

Claims 20, 21, 23 and 24 refer to an agonist or antagonist of the polypeptide without giving a true technical characterization. Moreover, no such compounds are defined in the application. In consequence, the scope of said claims is ambiguous and vague, and their subject-matter is not sufficiently disclosed and supported (Art. 5 and 6 PCT). No search can be carried out for such purely speculative claims whose wording is, in fact, a mere recitation of the results to be achieved.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

# INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

US 00/18509

Patent document  
cited in search report

Publication  
date

Patent family  
member(s)

Publication  
date

US 5874248 A

23-02-1999

US 5919450 A

06-07-1999